

# Knowledge Mapping Research On Tourism In Nepal<sup>1</sup>

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**Abstract:** This study aims to analyze the research front for tourism in Nepal, highlight the findings in the associated literature, and suggest future directions for research development. Traditional mathematical analysis and mapping of knowledge domains was used to conduct a literature review, examining the issues focused on in relevant studies, as well as the sampling methods, sample sizes, data-collection methods, and research designs applied. Sample articles were selected from the Web of Science Core Collection. The findings are presented from three perspectives: collaboration network, research-theme evolution, and research trends. The number of articles on tourism in Nepal has generally increased over time; however, the research has been centered on a core group of authors, journals, and institutions. The network densities for institutions and authors are low, indicating weak collaboration. Keyword clustering revealed 11 hotspots among the research themes, indicating that studies have analyzed tourism in Nepal from many different perspectives. Finally, no studies have examined the impact of COVID-19 on tourism in Nepal.

**Keywords:** Nepal, mapping knowledge domain, sustainable tourism development

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## I— Introduction

Since the end of the 10-year Nepalese Civil War (1996–2006), Nepal has relatively fallen behind other countries in terms of globalization. In August 2008, the Chairman of the Communist Party of Nepal (Maoist Center), Pushpa Kamal Dahal (popularly

known as “Prachanda”), was elected prime minister of the first government of the Federal Democratic Republic of Nepal. Prachanda consequently pledged to transform Nepal into an “Asian Switzerland” within 50 years and to embrace globalization (CFE-DMHA, 2008). Nepal, as a mountainous country, has experienced substantial growth in intranational tourists, and tourism development has brought significant economic benefits to the country while also impacting Nepal’s environment, cultures, and communities. In other words, the external pressure that accompanies tourism development has resulted in substantial changes to the natural and social environment of Nepal.

Tourism is an essential sector in Nepal, and is also regarded as an avenue of future development. Globalization may bring new opportunities to this mountainous country, but could also pose a threat to the sustainability of its mountain societies. As tourism plays an important role in Nepal’s economic structure and its mountainous features make it relatively isolated from the outside world, tourism development has a significant impact (Gautam, 2014).

Several studies have advanced the literature on tourism in Nepal; a search of Web of Science (WoS) returns articles on this topic from 56 different subject categories, including geography, environment, anthropology, water resources, infectious diseases, and zoology. The focuses of related studies have included the relationship between climate, environment, and tourism in South Asian countries (Mehmood et al., 2021), changes in environmental policy and mountain tourism in Nepal (Sacareau, 2009), quantitative approaches to evaluating the outcomes of tourism (Rosselló-Nadal, 2014), and comprehensive literature reviews of global health academic partnerships (Citrin et al.,

2017) and the greater one-horned rhinoceros (Pant et al., 2020).

However, despite the wide range of subject categories represented in Nepal-based tourism research, little is known about the general status of tourism in Nepal, as there has never been a synthesis of published articles on this topic. Moreover, the dynamics of tourism development mean that, to understand its components and impact, it is necessary to make constant efforts to identify new research perspectives and approaches. Therefore, to gain an understanding of the trends and current status of research on tourism in Nepal, and to identify research gaps that inhibit the growth of this field, a comprehensive research-front analysis of the development of such research is necessary.

The present study aims to identify the research front for research on tourism in Nepal by mapping related scientific literature. Traditional mathematical analysis and mapping knowledge domains are used to conduct the research-front analysis, focusing on topical issues, collaboration networks, keyword clustering, high-frequency keywords, high-centrality keywords, and time-series evolution. Specifically, the present study’s analysis is based on a specific tourism perspective, tourism in Nepal, and analyzed 48 high-quality articles published in leading tourism journals across a 23-year period: 1992–2021.

## II—— Knowledge Mapping Existing Research On Tourism In Nepal

### 2.1. Data Source

WoS is an independent global citation database with almost 1.9 billion cited references from over 171 million records (Clarivate, 2021). To avoid sample omission and sample-selection bias, the present study used as the data

source the WoS Core Collection database, which includes only journals that demonstrate high levels of editorial rigor and best practices. Based on the Science Citation Index Expanded, Social Sciences Citation Index, and Arts & Humanities Citation Index, a basic search was conducted for the topic “Nepal” and the topic “Tourism.” The filter for document type was set to “article,” with other document types, such as proceedings papers, meeting abstracts, and book reviews being excluded. The range for year of publication was set to 1990–2021 (the date on which this search was conducted was August 23, 2021). Consequently, 213 articles were returned, representing 56 subject categories, including anthropology, environmental studies, economics, and water resources. After excluding all categories except the hospitality, leisure, sport, and tourism category, 48 articles remained.

Every record in the WoS Core Collection contains its source publication’s subject category in the WoS categories field. Before a journal is accepted and indexed on WoS, the WoS editorial team assign it to at least one of the 250+ WoS categories based on the content of the material in question. The “hospitality, leisure, sport, and tourism” category includes tourism-focused journals such as *Analysis of Tourism Research*, *Tourism Management*, *Tourism Geographies*, *Tourism Studies*, and the *Journal of Sustainable Tourism*. Focusing on the hospitality, leisure, sport, and tourism category should remove papers unrelated to the analysis object. Thus, the present study used the 48 articles labeled under the hospitality, leisure, sport, and tourism category as the final analysis sample.

## 2.2. Study Methods

A research front is defined as an emergent and

transient grouping of concepts and underlying research issues concerning a specific topic (Chen, 2016). The present study used the methods developed in the mapping-knowledge domain to detect and visualize the research front concerning tourism in Nepal. The mapping-knowledge domain is an emerging interdisciplinary science field that aims to map, mine, analyze, classify, and display knowledge (Shiffrin & Börner, 2004). More specifically, following the approach of Chen (2016), the present study used the betweenness centrality metric to identify popular research topics and the research front. The basic approach of the mapping methods is to consider the words used in the titles, keywords, and abstracts and classify them by frequency to determine the “hot” (i.e., frequently occurring) words. Then, after cluster analysis concerning the occurrence of those hot words across the sample articles, the “co-occurrence network” of the research-front concepts can be generated. Therefore, in the context of research fronts, co-occurrence analysis represents the conceptual combination of a temporarily formed research-topic group and its related research concepts; it can indicate rising or quickly emerging theoretical trends, new topics, and the ideological status of a research field.

As keywords provide a concise and high-level summary of a research article, “keyword co-occurrence analysis” is used in the present research to identify emerging trends and monitor developments in research on tourism in Nepal. Furthermore, identifying which keywords appear more frequently across the sample articles, which keywords have higher centrality, and which keywords often appear together in articles can help us understand the development of the research field. In this study, CiteSpace was selected to perform the above-described calculations. CiteSpace software is

an information-visualization software based on the Java programming language, and was developed by Professor Chen Chaomei of Drexel University and initially released as a research prototype on September 25, 2003. Compared with other visualization tools, CiteSpace contains multiple calculation methods, and can afford higher visual clarity and interpretability (Chen, 2006). CiteSpace has been widely used to process knowledge maps for specific research fields, using collaboration analysis, co-occurrence cluster analysis, co-citation cluster analysis, and other visualization functions to explore the major research focuses; such analysis is performed through consideration of the input dataset, active research areas, intellectual turning points, and the connections between various fields in the broad context of the input dataset. The earliest article on WoS to feature CiteSpace was published in 2005 (Allendoerfer et al., 2005); today, research featuring CiteSpace can be found across 60+ fields, mainly library and information management, engineering, pedagogy, and sociology (Chen, 2016). In recent years, CiteSpace has been introduced in the fields of tourism, climate change (Fang et al., 2018), hospitality

(Li et al., 2017), and cultural heritage (Su et al., 2019).

### III— Results

#### 3.1. Research Outputs and Categories

The level of research activity and attention devoted to a particular research field can be determined by considering the number of papers that have been published on this topic. The WoS search described in the previous section returned 213 papers concerning tourism and Nepal, which were distributed across 56 research fields, including environmental science; hospitality, leisure, sport, and tourism; and environmental studies. Among these fields, 25 featured more than two papers concerning tourism and Nepal. Using the number of papers returned in the search as a metric, the research field of hospitality, leisure, sport, and tourism was the second-largest field (after environmental science), with 48 papers (22.5% of the total); these papers were used as the analysis sample for the present research.

Figure 1 shows, for the period 1982-2021, the yearly trend in the number of published papers

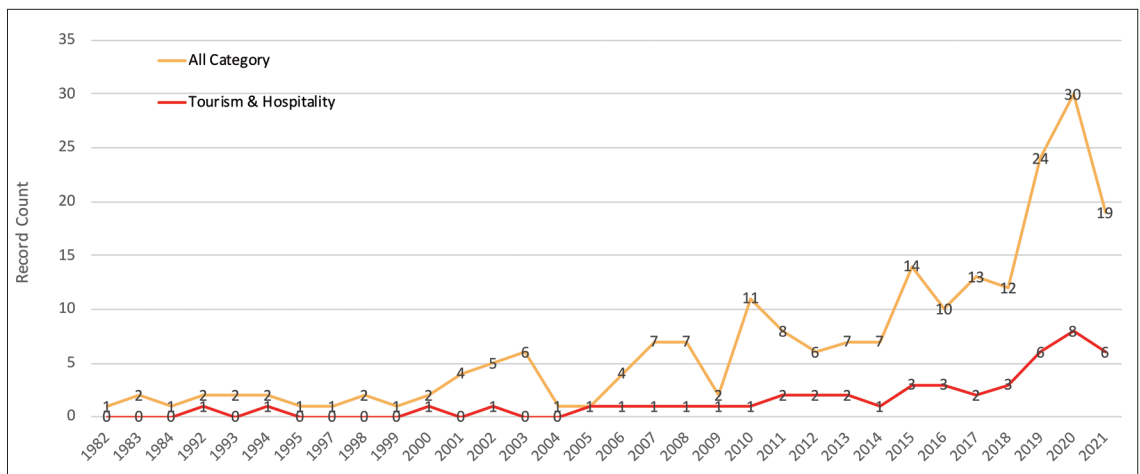


Figure 1 Annual numbers of papers published on the topic of Nepal and tourism for the period of 1982-2021.



Figure 2 The tourism-focused journals that have published research on tourism in Nepal.

concerning tourism and Nepal. The first paper concerning tourism research in Nepal appeared in 1992, but no relevant research articles were published in 1982-1992, 1993, 1995-1999, 2001, 2003, or 2004. As shown in Figure 1, there were few critical discussions of Nepal's tourism prior to 2006. From 2007 to 2015, just 11 papers were published, which implies that, at this time, the research field of tourism in Nepal had not attracted the attention of global experts and scholars. However, after 2016, a clear upward trend is shown. From 2016 to 2021, 28 articles were published (58.3% of the total publications), giving an average annual publication rate of 4.6; this indicates that the research field of tourism in Nepal is now attracting scholars' attention.

As shown in Figure 2, the 48-paper sample considered in the present study was distributed across 13 journals in the hospitality, leisure, sport, and tourism category. Among these journals, three published more than five of the 48 articles, respectively: Annals of Tourism Research (nine

articles), Tourism Management (eight articles), and the Journal of Sustainable Tourism (seven articles); this accounts for 52.08% of the sample papers. Although the present study selected only papers published in tourism-focused journals, the initial search showed that research on tourism in Nepal is represented not only by the hospitality, leisure, sport, and tourism field, but also the fields of management, society, environment studies, green sustainable science technology, and business; this shows that research on tourism in Nepal is an interdisciplinary field.

### 3.2. Collaboration Networks for Research on Tourism in Nepal

#### 3.2.1. Author Collaboration Network

Figure 3 illustrates the cooperative networks of the authors of the analyzed papers (the figure includes all individuals with an author credit for at least one article). The font size used for authors' names indicates the size of their contribution to the sample of articles analyzed (larger font size indicates more papers authored). The number of connections

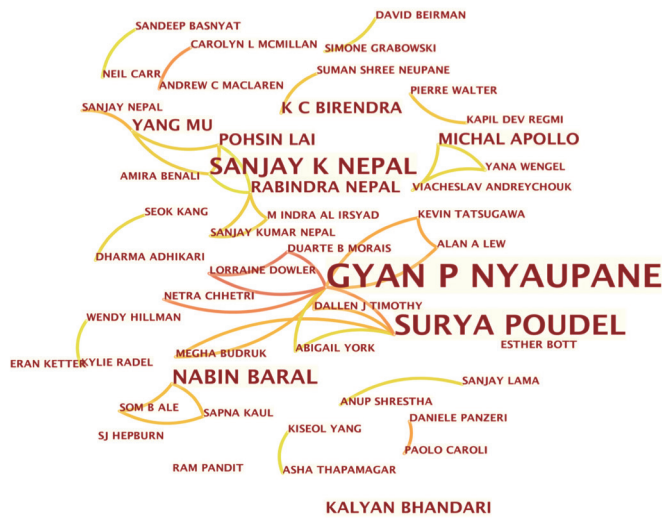


Figure 3 A visualization of the author co-citation network for research on tourism in Nepal

demonstrates the size of each author's cooperative relationship. Figure 3 shows 78 nodes ( $n=78$ ), 84 connections ( $E=84$ ), and the network density is 0.0028 ( $\text{density}=0.0028$ ); this indicates that the authors in the research field of tourism in Nepal do not cooperate closely. Table 1 lists the authors who published the most articles. Gyan P Nyapune published the highest number of articles, accounting for 18.4% of the total sample; Sanjay K Nepal and Surya Poudel ranked joint second, with six articles each. Six authors have more than three author credits each among the sample papers, with the papers in question accounting for 56.3% of the total articles. These scholars have played an essential role in promoting the development of research on tourism in Nepal. However, Figure 3 shows that the authors generally lack cooperation, with the exception of Gyan P Nyapune, Sanjay K Nepal, and Surya Poudel, who each have small cooperative groups.

### 3.2.2. Institutional and Country Collaboration Networks

By analyzing the collaboration network for the authors' institutions, we can understand the degree of academic support for and recognition of the research field of tourism in Nepal, and also identify the current situation regarding exchange and cooperation among research institutions in relation to this field. Table 1 shows the main institutions (and the countries in which they are based) involved in research on tourism in Nepal. In terms of the categories of institution represented, the data show that research on tourism in Nepal is concentrated in universities. The three institutions with the most appearances in the affiliations sections of the sample articles are Arizona State University, the University of North Texas Denton, and the University of Waterloo, respectively; these account for 45.83% of the sample articles. These data indicate a gap regarding the scientific research ability/interests of research institutions: among the top-10 research institutions (which indicates the 10 institutions that

Table 1 The leading institutions, and the countries in which they are based, regarding research on tourism in Nepal

| Affiliation   | Country   | Record count | % of total (48) |
|---|-----------|--------------|-----------------|
| Arizona State University                            | USA       | 9            | 18.75           |
| Arizona State University, Downtown Phoenix          | USA       | 8            | 16.67           |
| University of Waterloo                              | Canada    | 5            | 10.42           |
| University of North Texas, Denton                   | USA       | 4            | 8.33            |
| University of North Texas System                    | USA       | 4            | 8.33            |
| State University System of Florida                  | USA       | 3            | 6.25            |
| Arizona State University, Tempe                     | USA       | 2            | 4.17            |
| Pedagogical University of Cracow                    | Poland    | 2            | 4.17            |
| Texas A&M University, College Station               | USA       | 2            | 4.17            |
| Texas A&M University System                         | USA       | 2            | 4.17            |
| University of Newcastle                             | Australia | 2            | 4.17            |
| University of Nottingham                            | England   | 2            | 4.17            |
| University of Technology Sydney                     | Australia | 2            | 4.17            |
| University of Texas System                          | USA       | 2            | 4.17            |
| University of Washington                            | USA       | 2            | 4.17            |
| University of Washington, Seattle                   | USA       | 2            | 4.17            |
| Virginia Polytechnic Institute and State University | USA       | 2            | 4.17            |

have undertaken a large amount of relevant research and made outstanding contributions to the development of research on tourism in Nepal), eight are universities in the United States. However, this also shows that the research field of tourism in Nepal has strong regional characteristics.

Figure 4 shows a visualization of the research institutions' collaboration network (showing all

institutions associated with at least one publication).

In Figure 4, the font size is directly proportional to the number of articles associated with each institution; the more articles published, the larger the font on the institution's name. The number of connections is directly proportional to the size of each institution's collaboration network. There are 55 nodes ( $n = 55$ ) and 52 connections ( $E = 52$ ) in

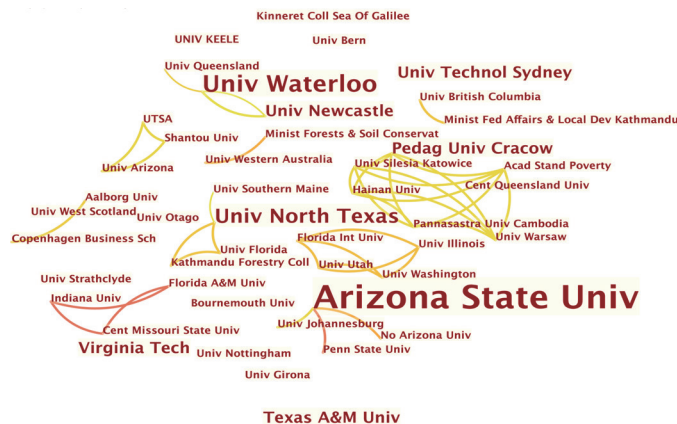


Figure 4 A visualization of the institutions' collaboration network



Table 2 Top terms across the 11 keyword clusters

| Cluster-ID | Cluster name                 | Cluster size | Top terms (LLR)   |
|------------|------------------------------|--------------|---|
| #0         | Community development        | 28           | Environmental change; trekking tourism; nature-based tourism; tourism constraints; social sanction                            |
| #1         | Evaluation                   | 27           | Institutional analysis; tourism outcomes; conservation; community livelihoods; measuring outcomes; stakeholders' perspectives |
| #2         | Contingent valuation         | 17           | Chitwan National Park; valuing access; world heritage site destination; case study; habitat influence on residents' attitudes |
| #3         | Identity                     | 17           | Chance tourism; visiting earthquake sites; tourist motivation; dark tourism; dark tourism segmentation                        |
| #4         | Heritage                     | 15           | Religious destination; understanding tourists; socially distant perspective; Buddhist heritage; pollutant emissions           |
| #5         | Himalaya                     | 10           | True accessibility; sacred landscape; national parks in Nepal; Sagarmatha Park; porter survey                                 |
| #6         | Normative classification     | 10           | Rural settlement; protected area; Annapurna; national park  |
| #8         | Number & type of tourists    | 10           | Annapurna Nepal; community involvement; Yunnan China; controlled comparison; eco-tourism project                              |
| #10        | Host learning                | 8            | Ghalegaun homestay; community-based tourism; Sirubari   |
| #11        | Self-development             | 5            | Volunteer expedition participants; ethnographic study; purpose; eudemonic experience; protected area                          |
| #12        | Confirmatory factor analysis | 3            | Annapurna conservation area; evaluating eco-tourism; replication studies; eco-tourism evaluation scale; temporal stability    |
| #13        | Disaster recovery            | 2            | Engaging volunteer tourism; post-disaster recovery; national park; protected area   |

LLR: Log likelihood ratio.

Figure 4, and the network density is 0.035 (density = 0.035). This indicates that the inter-institutional collaboration network regarding research on tourism in Nepal is not close, and that a wide cooperation network has not been formed.

### 3.3. Research Themes

Based on the keyword co-occurrence map generated, keyword-clustering analysis was conducted using the log likelihood ratio algorithm. The Q value (modularity) was equal to 0.85 ( $Q > 0.3$ ), and the S value (silhouette) was equal to 0.94 ( $S > 0.5$ ), which indicates that the clustering structure was reasonable and adequate. As shown in Table 2, the articles formed 11 hotspots of keyword clusters; namely, community development (#0), evaluation (#1), contingent valuation (#2), identity (#3), heritage (#4), Himalaya (#5), normative classification (#6), number and type of tourists (#8),

host learning (#10), self-development (#11), confirmatory factor analysis (#12), and disaster recovery (#13); higher numbers indicate larger cluster sizes. Table 2 lists the top terms for each cluster.

By reviewing the 48 research articles and combining the findings with the results of the keyword clustering analysis, the research theme of tourism in Nepal was divided into three research groups: "Development Path," "Host," and "Guest."

#### 3.3.1. Development Path

Of the three research groups identified, Development Path features the greatest number of publications; with papers featuring this perspective being published from 1994 to the present. The research scope includes three dimensions: national park/conservation area, national-level management, and evaluation. "Sustainable development" is the



core theme of the Development Path group.

The first paper on national park/conservation area management in Nepal was published in 1994. It discussed challenges to the cultural carrying capacity of the Land of Lō (part of the Upper Mustang kingdom), and the impact of the initial efforts to develop the tourism industry in the area after its opening to western visitors in 1992 (Shackley, 1994). After this paper, however, the impact of increasing numbers of tourists on the management of national parks and conservation areas did not receive further concerted attention from the academic community until 2013.

In 2013, as part of efforts to identify means of improving the sustainability of national-park management, some scholars assessed whether the interpretations offered by tour guides are essential for tourists to engage in sustainable tourism activities; this was performed by comparing the attitudes and behaviors of guided and nonguided tourists (Poudel & Nyaupane, 2013). Also in 2013, there was an investigation of the profiles of the porters who assist tourists in Sagarmatha National Park and an analysis of their contribution to the local tourism industry (Panzeri et al., 2013). In 2015, there was an investigation of international tourists in Chitwan National Park in terms of their willingness to pay an entry fee for access to the park (Pandit et al., 2015); similarly, in 2017 researchers investigated tourists' willingness to pay to access Sagarmatha National Park (Baral et al., 2017). In 2020, researchers compared the diverse management approaches applied in three protected areas, Chitwan National Park (national community), Annapurna Reserve (non-government management), and Kanchenjunga Reserve (community management), in terms of their effectiveness (Nyaupane et al., 2020). Finally, in 2021

researchers explored the relationship between biodiversity conservation, livelihood improvement, and tourism development in the Annapurna Conservation Area (S. K. Nepal et al., 2021).

Based on the results obtained from their research, the above authors made suggestions, from different perspectives, for managing national parks and conservation areas. In addition, energy consumption in national parks and the impact of climate change on mountain tourism was investigated in 2008 and 2009 (S. K. Nepal, 2008; Nyaupane & Chhetri, 2009), but there have been no follow-up studies on these topics.

On the other hand, some scholars have evaluated, through the use of various scales and evaluation systems, the management approaches applied in protected areas and the consequent tourism outcomes (Nyaupane et al., 2020). For example, there have been evaluations of the effectiveness of eco-tourism, (Birendra et al., 2018), measurements of sustainability in mountain tourism (Poudel et al., 2016), investigations of the short- and long-term relationships among tourist arrivals, energy use, consumption, and pollutant emissions (R. Nepal et al., 2019), and efforts to develop scales for evaluating eco-tourism based on tourists' perceptions of the socio-economic and environmental consequences of eco-tourism (Baral et al., 2012).

Analyzing the results of these scales and evaluation systems can help identify the management levels of protected areas, and this information can be used to promote the transition of protected parks into the sustainable tourism sector. At the national management level, major changes in the political system, the formulation and implementation of new policies, and the application of new technologies have profoundly impacted Nepal's tourism industry. Nepal declared itself a

Federal Democratic Republic in 2008, and soon after Bhandari (2010) examined, through a case study of Nepal, the impact of the associated major changes in the political system on the tourism industry. Later, Zhang, Adhikari, Fahmy, and Kang (2020) measured the image of Nepal as a destination based on consideration of the national reputation index; structural equation modeling consequently showed that the country's image impacts tourist behavior while service quality does not; this confirms the theory that perceived value is a good method of analyzing visitor behavior.

On the other hand, (S. K. Nepal, 2000) and (KC et al., 2021) presented policy and management suggestions for mitigating the environmental impact of tourism, and for facilitating the implementation of the sustainable development goals for Nepal.

In addition, in recent years digital technology, such as e-tourism and Facebook, has been mentioned in research concerning tourism in Nepal. The Nepal Tourism Bureau used Facebook in an attempt to restore the country's image after the Gorkha Earthquake (a magnitude 7.8 earthquake that struck on April 25, 2015), leading Ketter, (2016) to analyze the role of Facebook in travel crisis communication and image restoration. Lama, Pradhan, and Shrestha (2020) suggested that e-tourism plays a crucial role in the provision of services to tourists by improving tourism experiences; this means that small tourism-service providers in developing countries often have difficulty entering the global market because of an inability to effectively use e-tourism. Based on this, Lama et al. (2020) discussed the main obstacles to and motivations for adopting e-tourism among small- and medium-sized tourism companies located in developing countries.

### 3.3.2. *Host*

The research objects contained in the "Host" group include Nepalese women, Sherpas, and local communities, and the group mainly represents three aspects: the impact of tourism on the Nepalese social system, the perceptions/attitudes of locals towards tourism, and the impact of tourism on communities. Among these, locals' perceptions/attitudes is the most commonly discussed research focus in the "Host" category. This is because tourism development has had a significant impact on local people's lives and, as tourism has been developed in Nepal, local people's perceptions and attitudes towards tourism have changed.

Previous research analyzed, using differing perspectives, the changes in the Nepalese people's interpretations of various things, such as their understanding of tourism (Bhandari, 2021), the influence of tourism development on residents' interpretation of sacred landscapes (Mu et al., 2019), and Sherpas' perceptions of risk, death, and power relations in commercial mountaineering (Miller & Mair, 2020).

The development of international tourism has brought many new things to Nepal, such as travelers from other countries (Hepburn, 2002), a newly developed eco-tourism project (Birendra et al., 2018), and a home-stay program (KC, 2021). Nyaupane et al. (2014) discussed local people's views on the changes caused by tourism, while Walter et al., (2018) analyzed how Nepalese people are adapting to tourism-related changes and adjusting their beliefs, identities, and tourism practices.

On the other hand, the impact of tourism on communities has also been examined from a macro perspective. S. K. Nepal (2007) analyzed, using a

humanistic perspective, the growth of and change in rural settlements affected by tourism. Basnyat et al. (2021) conceptualized labor mobility in the tourism and hotel industries in developing countries. Meanwhile, in terms of social systems, studies have shown that tourism development can help women capitalize on their skills and roles and infiltrate deep-rooted patriarchy; Hillman & Radel (2021) and McMillan, O’Gorman, and MacLaren (2011) underlined that the tourism industry provides women with opportunities to correct unbalanced social development, thereby empowering women to promote sustainable social change in their country (in this case, Nepal).

### 3.3.3. Guest

The “guest” group contained the smallest number of articles. The research content mainly concerned two aspects: travel motivation and identity. Nepal has rich tourism, cultural, and religious resources, making it a popular tourist destination. Most of the famous tourist destinations in Nepal, such as Sagarmatha National Park, Annapurna Conservation Area, Chitwan National Park, Lumbini, earthquake sites, and other dark tourism tourist attractions are analyzed in the studies examined in the present research. Among the research that used Sagarmatha National Park as a survey site, Apoll (2017) discussed the true accessibility of mountaineering and proposed a conceptual framework for evaluating its accessibility. Meanwhile, Mu and Nepal (2016) investigated climbers’ perceptions of the risks (including death) associated with high mountain adventure tourism.

The research articles centered on the religious tourism destination Lumbini (Min et al., 2021; Nyaupane et al., 2015; Zerva, 2018) mainly explored tourists’ motivations and their identities.

On the other hand, based on a controlled

comparison of Annapurna, Nepal, and Northwest Yunnan, China, Nyaupane, Morais, and Dowler (2006) demonstrated that different types of travelers have differing impacts on the economic environment and culture of tourist areas. In addition, Curtin and Brown (2019) explored, through participant observation, the experiences of volunteers on an elephant conservation expedition in Bardia National Park; this approach highlighted that volunteers should be considered as having different travel identities to those of ordinary travelers, as they are also contributors to local communities.

## 3.4 Mapping Research Trends based on Keywords

### 3.4.1. High-Frequency Keywords and High-Centrality Keywords

Keywords reflect the key topics and focuses of research articles. By analyzing keywords and articles’ dates of publication, the characteristics of the research theme at certain periods can be identified. Table 3 shows the most common keywords used across the sample articles, ranked in terms of their frequency and centrality. Excluding the keywords “Nepal” and “tourism,” other high-frequency keywords are “management,” “perception,” “protected area,” and “eco-tourism,” which indicates that the research field of tourism in Nepal covers a wide range. The centrality value reflects the importance of each keyword in the network. A centrality value higher than 0.1 indicates that a keyword is relatively important.

Five keywords showed a centrality of > 0.1: “environment,” “climate change,” and “Annapurna conservation area”; other keywords, such as “sustainable tourism,” “attitude,” and “risk perceptions,” had a centrality value of 0, meaning they are in the early stage of research and have little influence.

Table 3 The ten most common and central keywords

| By Freq             |                 | By Centrality               |            |
|---------------------|-----------------|-----------------------------|------------|
| Keywords            | Citation Counts | Keywords                    | Centrality |
| Nepal               | 23              | Environment                 | 0.25       |
| Tourism             | 16              | Climate change              | 0.24       |
| Management          | 11              | Annapurna Conservation Area | 0.16       |
| Perception          | 10              | Identity                    | 0.11       |
| Protected area      | 9               | China                       | 0.11       |
| Eco-tourism         | 9               | Everest                     | 0.09       |
| Conservation        | 8               | Buddhism                    | 0.05       |
| Sustainable tourism | 8               | Contingent valuation        | 0.03       |
| National park       | 7               | Chitwan National Park       | 0.03       |
| Attitude            | 6               | Biodiversity                | 0.03       |

### 3.4.2. Time-Series Evolution of Research Topics

The development process and thematic evolution of research on tourism in Nepal can be analyzed

across periods by considering the time-series change in keyword clustering. Figure 5 shows the time zoom map generated by the keyword co-occurrence analysis; this shows the dynamic evolution of

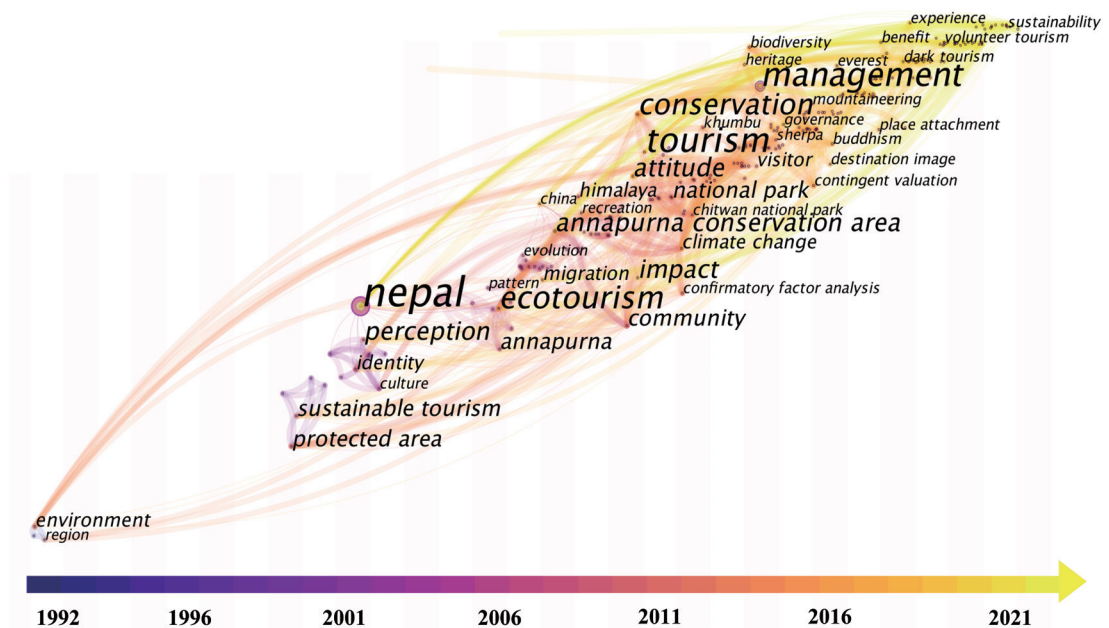
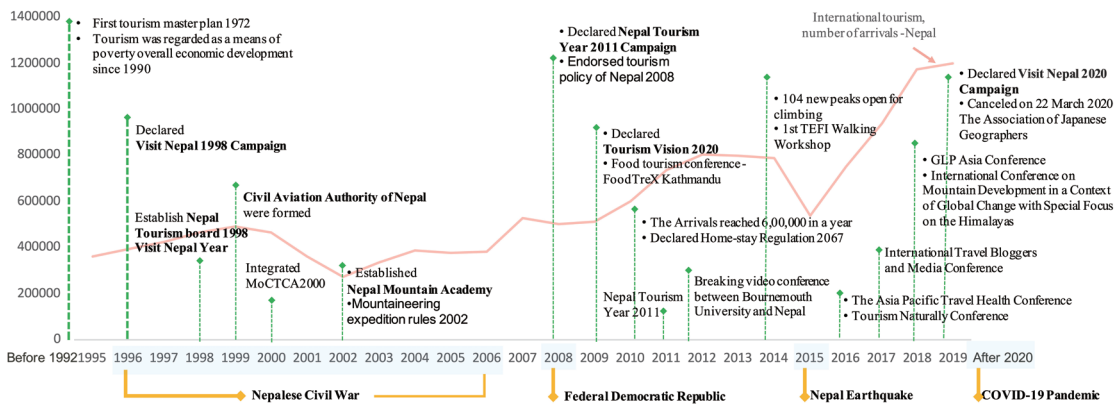


Figure 5 The tourism-focused journals that have published research on tourism in Nepal.



COVID-19: Coronavirus disease 2019; MoCTCA: Ministry of Culture, Tourism, and Civil Aviation

Figure 6 The national tourism events, tourism-related conferences, and national events held in Nepal, and the number of international arrivals to the country – a time-series view for the period of 1995-2020.

research topics in Nepal’s tourism field and the layout characteristics of the keywords. Figure 6 presents, using a time-series view, the national tourism events, tourism-related conferences, and other important events held in Nepal, as well as the number of international arrivals, for the period of 1995-2020. Considering the number of papers published on Nepal and tourism (Figure 3), and the fact that the publication dates of these papers ranged from 1992 to 2021, the present study divided the publication period of research on tourism in Nepal into three stages.

The first stage was 1992-2006. The high-frequency keywords for this stage were “environment,” “sustainable tourism,” and “culture.” At this point, the number of related research articles and active researchers was very small. In 1996, the Nepalese Civil War, which was a protracted armed conflict that resulted in the overthrow of the Nepalese monarchy and the establishment of a people’s republic, began. During the civil war, Nepal’s political situation was chaotic and there were many casualties. The war ended with the signing of the

Comprehensive Peace Accord on November 21, 2006.

The first article concerning tourism in Nepal was published in the *Annals of Tourism Research* in 1992, and presented a foundation for the development of tourism in Nepal. The first national tourism campaign was launched in 1998, a year when Nepal received 463,684 international visitors. The following year, 1999, the Civil Aviation Authority of Nepal was formed. In 2000, culture was integrated into the Nepal Ministry of Tourism and Civil Aviation, and it consequently became known as the Ministry of Culture, Tourism, and Civil Aviation (MoCTCA). In 2002, the MoCTCA established the Nepal Mountain Academy to cultivate future leaders in mountaineering and adventure tourism. Despite these developments, however, as a result of the influence of the domestic political situation the volume of publications and the number of international tourists at this stage were both at a low level.

The second stage was 2007–2015. The number of articles published increased from six to 14,

accounting for 30.2% of the articles analyzed in the present paper. The high-frequency keywords for stage two were “ecotourism,” “impact,” “community,” and “attitude.” On May 28, 2008, the newly elected constituent assembly declared Nepal a Federal Democratic Republic. In 2010, as the domestic situation stabilized, the number of international tourists reached 600,000. In 2011, the Nepalese government launched the second national tourism campaign (Nepal Tourism Year 2011), and in 2014 opened 104 new peaks for climbing. In relation to academia, in 2012 a video conference between Bournemouth University and representatives of three Nepalese universities was held. However, on April 25, 2015, a severe earthquake, the Gorkha Earthquake, struck close to the capital city of Kathmandu, causing approximately 9,000 deaths and damaging or destroying over 600,000 structures in Kathmandu. The overall economic loss in the tourism sector due to the earthquake was estimated at 81,241 million Nepalese rupees (approximately US\$771 million; (Rijal, 2016)

The third stage was 2016–2021. Thirty-one research articles were published in less than six years, accounting for 58.3% of the total number of sample articles. The high-frequency keywords for this stage were “management,” “experience,” and “conservation.” A notable feature of this stage is that the number of tourism-related conferences held in Nepal increased significantly at this time; these conferences included the Asia Pacific Travel Health Conference 2014, the Tourism Naturally Conference 2014, the International Travel Bloggers and Media Conference 2017, the Global Land Programme Asia Conference 2018, and the International Conference on Mountain Development in a Context of Global Change with Special Focus on the Himalayas. In

addition, with recovery from the Nepal earthquake, international arrivals rebounded, reaching a new peak in 2018. In 2019, the government declared the Visit Nepal 2020 campaign; however, this was canceled because of the outbreak of the Coronavirus Disease 2019 (COVID-19) Pandemic.

## IV—Conclusion

The research-front analysis developed in the present study attempted to present a critical analysis of the research theme of tourism in Nepal. Based on consideration of the associated collaboration networks and relational indicators, and through keyword co-occurrence analysis and qualitative thematic analysis, the present study explored the research themes, hotspots, and trends for the field of tourism in Nepal.

This study analyzed 48 refereed articles published across 13 tourism journals. The present study’s primary conclusions are the following:

(1) The number of research articles has generally increased annually, with a large increase occurring after 2015. At present, the research field of tourism in Nepal is in a period of rapid expansion.

(2) Analysis and discussion of tourism in Nepal is centered on a core group of authors, journals, and institutions. Gyan P Nyaupane (nine articles), Sanjay K Nepal (six articles), and Surya Poudel (six articles) are the most influential authors in the field of research on tourism in Nepal. *Annals of Tourism Research* (nine articles), *Tourism Management* (eight papers), and the *Journal of Sustainable Tourism* (seven papers) are the three journals with the largest number of published articles concerning research on tourism in Nepal, accounting for 52.08% of the articles in the present sample. Arizona State



University, the University of North Texas, Denton, and the University of Waterloo are the top three universities contributing to research on tourism in Nepal.

(3) The sparse network density of institutions and authors indicates that the cooperative relationship for this field is weak. Strong research teams have not yet been formed, and the connections between the different research institutions are insubstantial.

(4) Literature on tourism in Nepal appears across multiple disciplines, which shows that it is an interdisciplinary research field.

(5) Through qualitative thematic analysis, research on tourism in Nepal was divided into three general themes: “Development Path,” “Host,” and “Guest.” However, the research theme “Guest” has not received sufficient attention.

(6) Through conducting keyword clustering among the 48 articles, 11 hotspots were identified among the research themes. This indicates that past studies have analyzed tourism in Nepal from many different perspectives.

(7) The research streams for tourism in Nepal can be generally divided into three periods.

The first stream (1992–2006) addressed the impact of tourism development on culture and the environment, laying the foundation for sustainability in the field. The second stream (2007–2015) focused on the keywords “eco-tourism,” “impact,” and “community.” The third stream (2016–2021) concentrated on “management,” “experience,” and “conservation.” The third stream also featured the hot topics of travel motivation and volunteering, with associated research focusing on studying dark-tourism sites, understanding tourist behavior, and examining responses to the Gorkha Earthquake.

(8) The WoS Core Collection does not contain

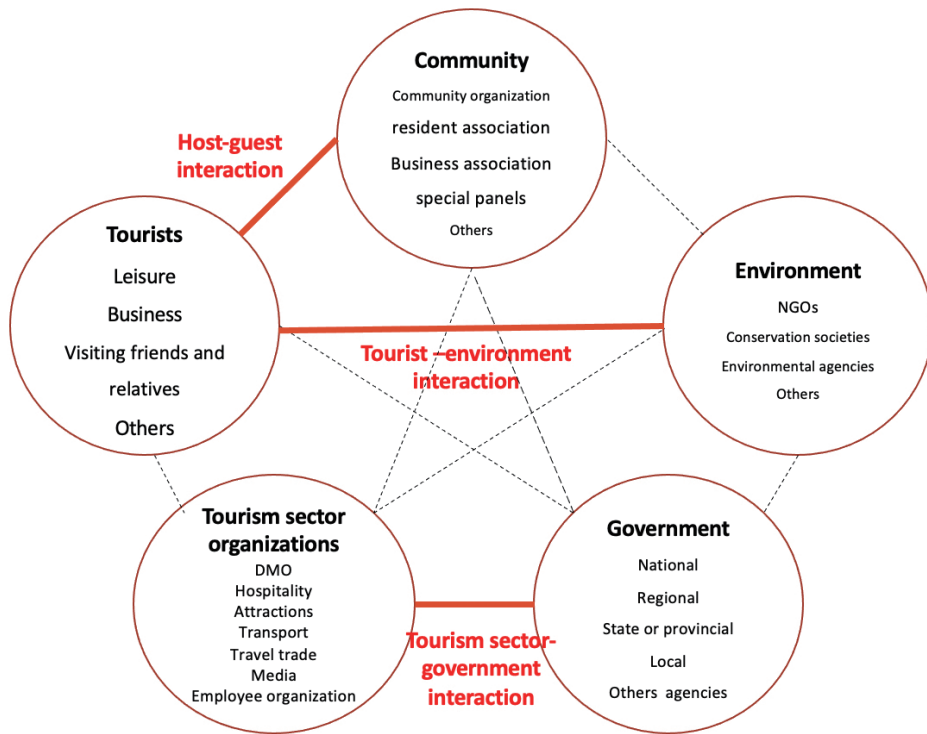
any study on the impact of COVID-19 on tourism in Nepal.

Combining the above conclusions and analysis results indicates that there are three substantial gaps in the field that urgently need to be bridged.

First, there is a need for more in-depth discussions on existing research themes and, through this, the derivation of new theories. Keyword clustering analysis extracted 11 research hotspots from the 48 articles, which indicates that existing studies have analyzed tourism in Nepal from many different perspectives; however, as shown in Table 2, some cluster sizes were very small. Therefore, future studies on tourism in Nepal should supplement, expand, update, and verify the findings presented in the existing literature, which would facilitate in-depth discussion of each cluster and the establishment of connections with other clusters. Such efforts would help increase the density of the research network regarding tourism in Nepal.

Second, the research perspective should be expanded to tourist–tourism-sector interaction and tourist–government interaction. According to Morrison (2013), the five main stakeholders in destination management are tourists, tourism-sector organizations, communities, the environment, and the government; this is represented in Figure 7. All five stakeholders contribute to the success of tourism at a destination. More specifically, tourists and tourism-sector organizations are directly affected by the tourism situation at the destination, while the other three groups are relatively indirectly affected by the tourism situation at the destination. Past research has specifically focused on the interaction between hosts and guests (e.g. Hepburn, 2002), scale development (e.g. Birendra et al., 2018), and





DMOs: Destination marketing organizations; NGOs: non-governmental organizations

Figure 7 Research coverage of tourism in Nepal.

outcome evaluation (R. Nepal et al., 2019); as shown in Figure 7, a small number of articles have also studied tourist-environment interaction (e.g. Baral et al., 2012) and tourism-sector-government interaction (Ketter, 2016). However, tourist-tourism-sector interaction and tourist-government interaction have been neglected.

Tourists, hospitality, and the tourism sector are inseparable. As perceived value is considered to be one of the core issues in service management, hospitality research has long focused on concepts relating to service quality (Gronroos, 1988), tourist satisfaction (del Bosque & San Martín, 2008), and service marketing (Lapierre, 2000). In the context of Nepal, which is an emerging tourist destination, in

addition to focusing on means of increasing the number of international tourists, stakeholders must also consider means of maintaining and improving the perceived service value. Additionally, although there is an inherent link between hospitality and service, thus far no previous research has systematically analyzed the understanding, concept, theory, principles, and evolution process regarding hospitality in Nepal's tourism sector. In 2010, the Nepalese government announced a plan to vigorously develop tourism through the "Home-stay Regulation 2067" (Devkota 2008). This home-stay tourism program increased the participation of Nepalese people in tourism activities, and made residents aware of the importance of maintaining

good personal hygiene and environmental hygiene; meanwhile, the associated increase in tourism income and tourism projects also lead to cultural changes. Thus, the above indicates that tourists, hospitality, and the tourism sector, as important components of tourist destinations, must be further examined in the future.

On the other hand, it is not sufficient for communication and interaction to occur only among tourists, tourism-sector organizations, environmental groups, and the community. Continuous interaction between tourists and government agencies is also required. The government is usually the main player in visitor management, aiming to protect visitors, residents, natural heritage, and cultural resources (Morrison, 2013). Visitor management is particularly important in protected areas, such as national parks and marine parks. In 2019, there was a congestion incident on Mount Everest; over 100 climbers waited for as long as 2-3 hours in extreme cold and hypoxic conditions at an altitude of 8,000 m, and such incidents occur almost every mountain-climbing season (Kelly, 2013). Furthermore, the annual increase in climbers and the pollution associated with these tourists has resulted in Mount Everest effectively becoming the

highest dump site in the world (BBC, 2018). Problems such as environmental damage and over-tourism can easily occur, even with a small number of tourists, if there is no effective tourist-management system. Managing visitors not only has implications for natural heritage and cultural resource protection, but also for ensuring visitors' safety and security. Therefore, future research should not ignore tourist-government interaction.

Third, future research should more closely consider the impact of digital technology and COVID-19. The COVID-19 Pandemic has impacted all aspects of the contemporary tourism industry. It has accelerated the popularization of artificial intelligence in the tourism industry; for example, the use of unmanned smart hotels; further, tourists' behaviors and preferences are changing as a result of COVID-19. Tourism industries are consequently adjusting their market strategies in response to changes in the external environment. In future research, the impact of COVID-19 and technology should be considered.

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